# NORTH CAROLINA LAPIDARY SOCIETY

May 1982



# MEETINGS:

Third Thursday each month. GEMCRAFTERS 2106 Patterson St. Greensboro, NC 27407



MEETING DATE: May 20, 1982

TIME

: 7:30 PM

PLACE

: GEMCRAFTERS

2106 Patterson St. Greensboro, NC

Greensboro

PROGRAM

: <u>DOPPING</u> - Frank Macey will moderate a discussion with demonstrations of various methods of dopping and transferring gems for faceting. Included will be use of the various adhesives (waxes and glues) with the advantages and disadvantages of each.

#### OFFICERS 1982

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EXECUTIVE BOARD meets at the call of the president.

MEMBERSHIP DUES : \$12.00 per year - prorated quarterly.

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# FACETING COMPETITION WINNERS

The NCLS faceting competition for 1982 was held in conjunction with the annual Gem and Mineral Show of the Charlotte, NC Gem and Mineral Club. Winners are:

#### THREE STONE COMPETITION

First Place: Robert E. Teachout Holly Hill, SC

Second and Third places in the Three Stone Competition were not awarded.

# SINGLE STONE COMPETITION

First Place: Neal A. Anderson Greensboro, NC

Second Place: Richard C. Duggins Raleigh, NC

Third Place: Roy N. Greene Greensboro, NC

First Place winners were awarded Ultra Tec Special Award Trophies, Selections of faceting material furnished by SCIENCE HOBBIES of Charlotte and the Charlotte Gem and Mineral Club and First Place Blue Ribbons. Second and Third Place entries were awarded Red Ribbons and White Ribbons respectively.

#### \*\*\*\*\*\*\*\*\*\*

# COMING EVENTS

June 18 - 20 EASTERN FEDERATION Convention and Show Monroeville (Pittsburgh), PA.

July 8 - 11 AFMS and SOUTH CENTRAL FEDERATION Convention and Show Houston, TX Astrohall.

Nov. 11 - 13 SOUTHEAST FEDERATION Show and Convention St. Petersburg, FL.

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# WANT TO BE AN INSTRUCTOR AT WILDACRES ??

Persons qualified to instruct in the lapidary and related subjects to be taught at the 1982 Wildacres workshops are invited to apply. There will be three workshops this year as follows:

1st. August 1 - 7

2nd Sept. 28 - Oct. 3.

3rd Oct. 3 - 8

All instructors accepted will receive free room and board at the workshop they participate in. If you are interested contact Tom Ricks for application forms.

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# The SIRIUS Cut

A modified Hexagon for Low-Refractive Index materials.

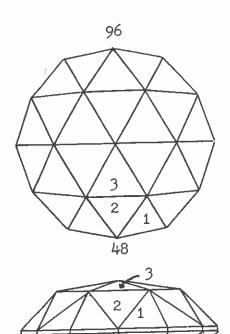
by Paul C. Smith Indianapolis, IN

Paul Smith, originator of the SIRIUS cut, has conducted extensive research in determining the best facet angles to bring out the most brilliance and dispersion of gem materials. Some of his results are startling! Paul sent along a stone (quartz) cut to the SIRIUS design which certainly demonstrates that his research is successful. It is an exceptionally brilliant stone for quartz and the pattern of brilliance is well distributed over the entire crown area.

Notice that the pavilion facets are cut very close to the critical angle for quartz (40.5 degrees). They are only 1/4 to 3/4 degree above the critical angle which one would generally think would guarantee a "fish-eye". However, there is none.

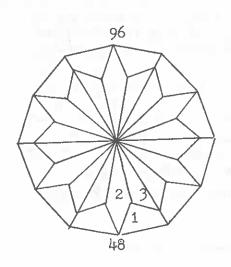
Notice, also, that there is no table as such. Instead there are six "apex" facets cut at 10 degrees. Paul contends that the apex facets are much superior to the old zero-degree table. We hope for additional data on this concept soon.

Try this one! You'll be more than pleased with the result. Use a 96 index.



	STEP	ANGLE	INDEX	COMMENT		
	First,	preform	the girdle -			
	1.	90°	03-13-19-29 35-45-51-61 67-77-83-93	Cut to same stop.		
PAVILION						
	1.	141 <sub>0</sub>	03-13-19-29 35-45-51-61 67-77-83-93	Cut for even girdle line. Line up with girdle facet junctions.		
	2.	41.25°	16-32-48 64-80-96	Cut to meet at culet and girdle.		
	3.	40.75°	04-12-20-28 36-44-52-60 68-76-84-92	Cut to meet at culet.		

SIRIUS - con't.

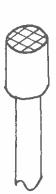


CROWN			
STEP	ANGLE	INDEX	COMMENT
1.	46.75°	03-13-19-29 35-45-51-61 67-77-83-93	Cut for even girdle of desired thickness.
2.	41.75	16-32-48 64-80-96	Cut to meet the girdle line.
3.	10 <sup>°</sup>	16-32-48 64-80-96	Cut to the meet point of girdle facets and to a good meet in center of crown.

The data given gives an apex "table" of about 55% of stone diameter (across index 96 and 48). The depth-to-diameter ratio is approximately 71%.

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Cyano-acrylate adhesives such as Eastman 910 and Super Glue solve many dopping problems for the hobby faceter as reported in the STONE CUTTER for February, 1982. However, it has been learned (the hard way) that sometimes the bond between dop and stone is too strong!

When using dops with completely <u>flat</u> faces, the standard procedure of heating the dop to cause the "super" glue to release does not always work. In many cases the bond between the stone and the flat surface of the dop is so indestructable that the dop breaks away with a large part of the crown still attached!

One solution for this problem is to score the flat face of the dop with a triangular file or jewelers saw as illustrated in the sketch at the left. When this has been done, the dop breaks away without difficulty.

Another solution is not to use flat faced dops. A little of the "super" glue around the rim of a cone dop gives adequate holding power even on the flat table of a large stone.

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# CHECK YOUR OIL!

by Tom Barry

From "Stoney Statements", Bulletin of the Clear Lake, TX
Gem and Mineral Society

An easy way to look "inside" a gemstone or piece of gem rough is to submerge it in the right kind of oil. It will then almost disappear, and only the flaws and inclusions will stand out. It's an easy way to find inclusions, cleavage planes, flaws etc.

Oil of wintergreen is commonly used for this purpose, but there are many others that will also do the job. It will be fun to look in your kitchen cabinet and try out the corn oil, olive oil etc. If you match the oil with the right mineral or gem, you will be amazed at how clearly you can see inside the gem or mineral. It should be noted that diamonds (R.I.=2.42) and other materials with the higher indices of refraction require liquids which are not commonly available.

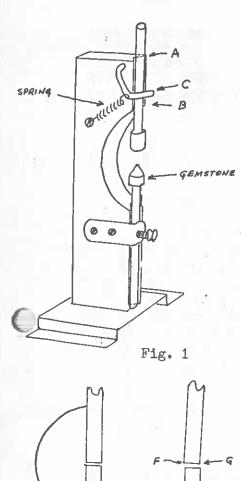
Match your oil and gemstone and explore! For more data see <u>Gemstone & Mineral Data Book</u> by John Sinkankas.

REFRACTIVE INDEX	MATCHING LIQUID	MATCHING GEM OR MINERAL
1.33 1.40 - 1.45	water ethylene glycol beeswax coconut oil paraffin wax	ice cube (1.34) fluorite opal (1.44)
1.45 - 1.50	almond oil castor oil corn oil carnauba wax neatsfoot oil kerosene cod liver oil linseed oil olive oil	sodalite calcite (1.49 - 1.66) obsidian
1.50 - 1.55	oil of wintergreen (1.53) anise oil clove oil	amber quartz (1.55) glass chalcedony moonstone
1.55 - 1.60	cassia oil	beryl (1.56) rhodochrosite nephrite (1.60)

ED. NOTE: One procedure is to immerse the gem in the appropriate liquid in a glass container with transparent sides and hold the container up to a strong light, looking at the gem through the side. Use tweezers or a stone holder to manipulate the stone.

# WEAR IN TRANSFER FIXTURE CAN CAUSE ALIGNMENT PROBLEM -

The article, ALIGNMENT IS IMPORTANT, in the STONE CUTTER for March, 1982 has prompted Paul C. Smith of Indianapolis, IN to comment on the alignment problem that he traced to wear in his transfer fixture. Paul writes as follows:



(D)

My Raytech-Shaw machine was 7 years old last February. A sketch of the principal features of the transfer jig is shown in Fig. 1. In using the jig, I mount the dop containing the stone with faceted pavilion in the lower V-groove where it is held by a thumb screw. The receiving dop is primed with wax and positioned in the upper Vgroove where it is tightly held by the spring-loaded lever, C. When the receiving dop shank is heated to soften the dop wax it is then pushed down against the gemstone by a sliding bar (not shown) that engages the alignment pin on the upper dop. Although the receiving dop is held in the upper groove by bar C, it is free to be pushed down to meet the lower dop. This, of course, causes sliding friction between dop and V-groove and some wear is inevitable. The dops and the fixture are both made of aluminum and over the years there was enough wear on the Vgroove walls to affect the dop alignment. Notice that the restraining lever, C, is closer to point B than to point A. Therefore there was more wear near point B than near A.

The effect of this wear is shown in Fig. 2. At Fig. 2D perfect alignment is shown, such as you would expect from a new transfer jig, with no wear. Fig. 2E shows how the wear on the upper V-groove has allowed the receiving dop to move out of alignment. The effect is exaggerated for clarity. The result is that when the crown is faceted and each girdle facet is cut to the stop, the girdle is uneven, going from narrow on side F to wide on side G ( at first glance you'd swear it would be the other way around, would-n't you).

I found that a small piece of aluminum foil from my wife's kitchen supplies was just the right thickness to bring the dops back into alignment. When that wears out I will replace it or try some other remedy."

# STRIKES CLOSE TO HOME, Ed.

Fig. 2

(E)

"I'm at the age when I'll have nothing to do with natural foods," said the elderly man. "I need all the preservatives I can get."

from The Mountain Gem Franklin, NC

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# GEOLOGY

by Murray Pease American River Currents

Geology is mostly about rocks. There are three main kinds of rocks: ignominious, sedentary and metaphoric. Ignominious rocks can be taken for granite. Sedentary rocks are mostly chalk, which comes in cliffs or small round sticks, and sandstone, about which the less said the better. Metaphoric rocks are more interesting. One kind is marble which comes in little round balls, flat slabs and shapes that look like naked people without arms, which are kept in museums. Another kind is slate which is for geologists to write on with Chalk. The only other kind worth mentioning is steatite, or soapstone, which is found in the shape of ash trays and old-fashioned sinks. The other kinds are mostly a lot of schist.

Stones come in a lot of different periods. These were invented by geologists, who have to have something to do, and they are the only ones who can remember which is which. The only one I can remember is the Plasticene period, which is when man first learned how to model and get oil stains on his rompers.

You have to sort of get used to geologists. At first they seem to have nothing but rocks in their heads, and when they talk about beds, they don't mean what you think. But underneath they are almost normal. When they go on a field trip with the little hammers, they sit around the evening fire on their terminal moraines and sing just like anybody else, songs like "Lava Come Back To Me", "Shale Be Cambrian Round The Mountain", "You'd Be So Gneiss To Come Home To", and "When The Chalk Is On The Greensands I'll Come Huronian Back To You In My New Red Marl". When you meet a geologist, be nice to him, he may be somebody's mammal.

from the Carmel Valley Prospector Rose and Ewell Cole, Editors and Publishers

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CONFUCIUS SAY .... A lot of times happiness will come through a door you didn't even know you left open.

from Gem Time via Carmel Valley Prospector